

Tempe Fire Department Policies and Procedures
Hose Lays
405.03C
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PROCEDURE

Tempe Fire Department hose evolutions are designed primarily for the forward attack pumper concept. However, the reverse lay is still maintained as an option. Successful fire extinguishment depends largely upon the speed and efficiency of engine companies in stretching hose lines and putting them into operation in the minimum amount of time consistent with efficiency and safety.

A typical hose layout evolution consists of the following:

- A. Taking the hydrant.
- B. Laying supply lines.
- C. Estimating amount of attack hose required.
- D. Leading attack lines into position.
- E. Charging hose lines to operate on the fire.

TAKING A HYDRANT

The apparatus will be brought to a complete stop, with the tailboard 5' to 10' past the hydrant. This is to eliminate the possibility of injury from leaving the apparatus while it is still in motion. When the apparatus stops the officer gives the command to take the hydrant and instructs the hydrant person as to which type of hose lay will be used.

LAYING LINES

Lines should be laid on the hydrant side of the street to minimize running over hose by other apparatus responding to the fire. Use a moderate speed when laying lines, otherwise the hose will zigzag coming out of the bed, causing more hose than necessary to be used and increasing the friction loss considerably.

LEADING LINES INTO POSITION

To implement extended or lengthy hose lines, the nozzle person places hose under their arm, across the chest and over opposite shoulder, letting nozzle hang on their back. Each person thereafter drops back 25' and places the line on their shoulder. All persons should be on the same side of the hose. This procedure is utilized for both ground level and ladder operations. However, when hose lines are advanced up a ladder they should be secured by means such as hose straps, hose chains, etc., before they are charged. When advancing long lines or lines above the second floor via stairways consider dropping a rope down or use the shoulder load method. This involves putting a 25-foot distance between each person and several folds of hose on each person's shoulder. (See Figure 1). Be sure all kinks are removed in attack lines as well as supply lines.

SUPPLYING SPRINKLER AND STANDPIPE SYSTEMS

Both of these systems are usually provided with two or more 2-1/2" siamese connections. Each siamese is equipped with clapper valves, and female swivels are protected by plugs or breakable caps. You will find, either on the siamese or the face plate attached to the exterior wall, letters designating which type system it is.

Remove protective caps, check inlet for any foreign material, and connect a 4" and 2½" line to the siamese. When all lines are connected, the pump operator will charge the system.



Figure 1

NOTE: Sprinkler Systems - When there is any indication that heads have opened and/or fire and smoke is visible, supply 150 psi to the siamese.

SINGLE FORWARD LAY

This is the hose evolution for a single forward supply line. When the apparatus stops at the hydrant, the hydrant person will go to the tailboard of the truck and remove the plug wrench and the Humat valve, which is connected to the 4" line.

They will pull sufficient slack to reach the hydrant, plus about 8'-10' of hose (always walk forward, watching where you are going). The hydrant person snubs the line around the hydrant while moving to an area where they can be seen by the apparatus engineer or captain. When the line is snubbed, the hydrant person will assume the "set" position and yell "go" (see Figure 2). While the apparatus is moving to the fire scene, the hydrant person should be prepared for the hose to snag. If a snag occurs, they should provide some resistance to see if it will break loose and continue to play out. However, if it does not, they should let go of the hose to prevent injury. Once sufficient hose is laid to prevent tension on the line at the hydrant, (1-2 couplings on the ground) the hydrant person will walk the line back around the hydrant and set the Humat valve away from the work area, loosen the steamer hydrant cap and places the plug wrench on top of the hydrant. The hydrant person connects the Humat valve. The hose line is placed away from the street and laid in the direction of the fire. The Humat valve can be inverted if necessary, or the hose loop can simply be placed behind the hydrant (see Figure 3). The Humat valve should be inverted only as a last resort. When the hydrant person is sure the hose clamp is in place, they stand behind



Figure 2

the hydrant, opening it until the water starts to flow. (The butterfly valve should be in the open position when the Humat valve is on the tailboard.) After briefly flushing the hydrant, close the butterfly valve. The hydrant person then turns the hydrant on completely, clearing the hose at least 15' in front of the hydrant for pumper operations. Take the hydrant wrench to the apparatus, straightening any kinks in the supply line. After returning to the apparatus, check with the engineer for additional instructions and join the rest of the crew in firefighting

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operations.

With the engine spotted at the fire scene, the engineer prepares the apparatus for pumping. The engineer will remove the hose clamp and place the clamp on the supply line 2' to 3' behind the first coupling. If the first coupling is within 10' of the tailboard, move the clamp to the next coupling towards the hydrant. When applying the clamp, the engineer must be sure it is properly latched, centered, and screwed down all the way. Operate the clamp from the latch side and use your foot on the base to steady it. Always position yourself between the tailboard and the hose clamp when applying or releasing the clamp. (See Figure 4). When releasing the hose clamp, unscrew the clamp all the way to the top so that water passes through the hose without obstruction.

After charging the appropriate lines with tank water, the engineer will go to the rear of the engine and remove enough line from the straight lay hose bed to reach the intake. After connecting the supply line to the intake, the engineer releases the hose clamp converting the water supply from tank water to hydrant water and adjusts the engine pressure to compensate for the residual pressure from the hydrant.

DOUBLE FORWARD LAY

The hose evolution for a double forward hose lay is the same as that for a single forward hose lay with the following exception. A 2 1/2" double female adapter is required. The hydrant person pulls sufficient hose from both the 4" and 2-1/2" beds to snub them both around the hydrant (see Figure 5). After having walked both lines back around the hydrant, he puts the Humat valve and the 2-1/2" supply line on the hydrant. The 2-1/2" supply line should be hooked to the outlet which faces the direction of the hose lay. At the fire scene, the engineer or nozzleperson places the hose clamp on the 2-1/2" supply line. Never put more than one hose line in the clamp at a time (see Figure 6). The engineer then removes enough 4" to reach the intake. After connecting the 4" supply line, the engineer signals the hydrant person by giving two strong blasts of the air horn. The hydrant person then turns the hydrant on completely and proceeds to the apparatus straightening kinks in the supply line. After returning to the apparatus, they should check with the engineer for additional instructions prior to joining the rest of the crew in firefighting operations. As the supply line charges with water, the engineer converts the water supply from tank water to hydrant water and adjusts the engine pressure to compensate for the residual pressure from the hydrant. At this point the engineer should tend to any other pressing matters before connecting the 2-1/2" supply line. After connecting it, the engineer releases the hose clamp making sure to open it all the way.

REVERSE LAYS

Reverse lays will be defined in more general terms than other hose lays because of the many possible variations involved. Reverse lays can be single 2-1/2", single 4", or double. The situation will dictate the equipment needs and it will be up to the company officer to appraise that situation and order the appropriate equipment removed.



Figure 3



Figure 5

Figure 4

Some examples are:

- To supply a standpipe or sprinkler system might require a single 4" reverse with only a 3 1/2" to 2-1/2" reducer removed.
- To supply a ladder pipe or portable deluge, and attack lines might require a double reverse with bundles, SCBAs, gated wye handlights, 3 1/2" to 2-1/2" reducer, axes, and deluge all removed.

When making pull-backs, hose is removed in folds and laid out in rows behind the apparatus to avoid kinks and tangles and to permit faster calculation of the amount removed. The proper fold to remove is the first fold in the compartment that permits removal of 50' of hose by pulling back 25'. Pull-backs should be laid parallel to the supply line.

For a reverse lay, the nozzleperson or officer must "heel" the lines until sufficient hose is laid to prevent tension on the line. If a snag occurs, they should immediately get off the line to avoid injury (see Figure 7). When supplying a ladder pipe or a forward engine company, the supply line can be snubbed around the tires of the apparatus being supplied while the hose is being laid.

1-3/4" AND 2-1/2" PRECONNECT OPERATION

The captain and nozzleperson don self-contained breathing apparatus in preparation to pull the hose lines. To pull a preconnect, the nozzleperson will place the nozzle line across their chest, over their shoulder, and back under his arm grasping the loop in his hand. With the hose line secured, the nozzleperson proceeds straight away from the engine until the hose clears the bed before changing direction and proceeding to the fire. When the line held in the hand is stretched tight, it will pull out of the nozzleperson's hand.



Figure 7

Whoever is designated to operate the deck gun must be wearing complete protective clothing. It is the company officer's decision based upon the smoke condition as to whether or not they need to be breathing from the self-contained breathing apparatus. For quick attack operations, the deck gun is aimed and charged with tank water when ready. The deck gun should be maintained with a straight tip attached. The fog nozzle should be stored in a compartment and set on 350 GPM at all times. The engineer then secures a water supply by the proper method for the particular hose lay that has been used.

LADDER PIPE OPERATIONS



Figure 6

Ladder pipe operations vary from the other hose lays in this policy, in that it is the only two company operation. However, each company's procedures can be defined and dealt with independently. The engine company performs the hose lay specified by the officer. This can be a forward or reverse lay. The engine must have a secured water supply prior to charging the ladder pipe. The use of tank water is not appropriate for this operation. The ladder company spots the apparatus at the desired location and sets up for a water tower operation being sure to complete the following tasks:

- Set chocks.
- Set outriggers.
- Ladder pipe operator don and use SCBA.
- Ladder pipe operator use ladder belt.
- Have the turntable controls manned whenever anyone is up on the ladder.

TELEBOOM OPERATIONS

The use of a teleboom requires a coordinated effort of all crew members. When a company officer has elected to lay their own supply line the engineer will set up the apparatus. The engineer will lower the stabilizers and raise the teleboom and place it into position. The nozzleperson will secure the hose clamp on the supply line and then connect the supply line into the pump. The captain will put the stabilizer plates into position. If the teleboom is in position and the supply has been charged up to the hose clamp, either the captain or the nozzleperson may open the waterway discharge valve on the pump panel and utilize tank water. The hose clamp must then be opened immediately.

If a hydrant is steamed, the hydrant person and the nozzleperson will establish the water supply with the side suction. The captain will put the stabilizer plates into position. The engineer will set up the teleboom as mentioned previously.

FORWARD LAY - PRECONNECTED ATTACK LINE (QUICK ATTACK)

Step	Captain	Engineer	Nozzle	Hydrant
1		Stops with tailboard just past hydrant.		Dons SCBA
2	Orders hydrant person to take the hydrant.			Remove Humat valve and sufficient hose to wrap hydrant, signals readiness.
3	Proceeds to fire with apparatus.	Proceeds to fire, laying line on hydrant side of street.	Proceeds to fire with apparatus.	Connects Humat to hydrant.
4	Orders attack line, dons SCBA.	Sets brake, puts pump in gear, applies hose clamp.	Dons SCBA, takes appropriate nozzle and loops and leads line into position.	Opens hydrant.
5	Takes tool, joins nozzle person, dons facepiece/attaches regulator, checks nozzle person for bare skin, directs attack, removes kinks in attack line.	Charges attack line with tank water, sets relief valve, makes pullback.	Dons facepiece/attaches regulator, checks captain for bare skin, bleeds air out of line, adjusts nozzle, attacks fire.	Proceeds to pumper with hydrant wrench, removes kinks in supply line.
6		Connects supply line to intake, removes hose clamp, opens intake valve, adjusts pressure, closes tank valve. Engineer and hydrant person may be required to assume IRIC responsibilities		Assists engineer as necessary, reports to captain with appropriate tool. Engineer and hydrant person may be required to assume IRIC responsibilities.

FORWARD LAY - EXTENDED 1-3/4" (350')

Step	Captain	Engineer	Nozzle	Hydrant
1		Stops with tailboard just past hydrant.		Dons SCBA
2	Orders hydrant person to take the hydrant.			Removes Humat valve and sufficient hose to wrap hydrant, signals readiness.
3	Proceeds to fire with apparatus.	Proceeds to fire, laying line on hydrant side of street.	Proceeds to fire with apparatus.	Connects Humat to hydrant.
4	Orders extended (350') 1-3/4" dons SCBA.	Sets brake, puts pump in gear, applies hose clamp.	Dons SCBA, takes nozzle and loops from forward 1-3/4" pulls line to clear hosebed and stops.	Opens hydrant.
5		Removes nozzle from rear 1-3/4", Breaks coupling at short length of pulled line, replaces pigtail, connects lines together.		Proceeds to pumper with hydrant wrench, removes kinks in supply line.
6	With tool in hand, takes loops from rear 1-3/4", gives command to go, and proceeds to fire.		Proceeds to fire on command, leading line into position.	
7	Pulls line clear of hosebed, assists nozzle person if necessary.	Charges attack line with tank water, sets relief valve, makes pullback.	Dons facepiece, /attaches regulator checks captain for bare skin, bleeds air out of line, adjusts nozzle, attacks fire.	Assists engineer as necessary, reports to captain with appropriate tool. Assumes IRIC if required.
8	Dons facepiece, /attaches regulator checks nozzle person for bare skin, directs attack, removes kinks in attack line.	Connects supply line to intake, removes hose clamp, opens intake valve, adjusts pressure, closes tank valve. Assumes IRIC if required.		

FORWARD LAY - 2 SUPPLY LINES - OPTIONS: STANG GUN, LADDER PIPE

Step	Captain	Engineer	Nozzle	Hydrant
1		Stops with tailboard just past hydrant.		Dons SCBA
2	Orders hydrant person to take the hydrant - two lines.			Removes Humat valve with supply line connected and 2-1/2" supply line, wraps hydrant, signals readiness.
3	Proceeds to fire with apparatus.	Proceeds to fire laying lines on hydrant side of street.	Proceeds to fire with apparatus.	Connects Humat to hydrant, connects 2-1/2" to outlet facing direction of hose lay.
4	Orders attack, dons SCBA.	Sets brake, puts pump in gear, makes pullback from 4" bed, connects to intake, gives two blasts on air horn.	Dons SCBA, applies hose clamp to 2-1/2", operates stang (or makes connection to discharge and ladder pipe).	Opens hydrant when two blasts from air horn are heard.
5	Directs attack.	Pumps attack (stang or ladder pipe), opens intake, adjusts pressure.	Operates at direction of captain.	Proceeds to pumper with hydrant wrench, removes kinks in supply lines.
6		Makes pullback from 2-1/2" bed, attaches to intake, removes hose clamp, opens intake valve, re-adjusts pressure.		Assists engineer with connections, reports to captain.

REVERSE LAY - OPTIONS: LADDER PIPE, FORWARD PUMPER, FD CONNECTION, PORTABLE DELUGE

Step	Captain	Engineer	Nozzle	Hydrant
1	Orders reverse lay.	Stops apparatus in appropriate location.		
2	Removes and dons own SCBA, removes hose clamp, reviews equipment removed, positions self to see nozzle person and engineer, waves and yells go.	Proceeds to hydrant on command.	Removes own SCBA, 3-1/2" double male, any other necessary couplings or reducer, (other equipment as directed by captain), anchors line.	Breaks supply line from Humat, makes pullback of adequate line for connection being made, returns to jump seat, proceeds to hydrant with apparatus.
3	Applies hose clamp.	Spots apparatus at hydrant, sets brake, puts pump in gear.	Places supply line and makes connection.	Makes hydrant connection, opens hydrant, opens intake valve at direction of engineer.
4	Directs operation of assigned task.	Makes pullback, connects to discharge.	Dons SCBA, performs assigned task.	Makes connection to discharge and Humat (in pumping hydrant), dons SCBA, joins crew.
5		Pumps supply line at appropriate pressure, (pumps hydrant).		